



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

hr

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,146	07/03/2003	Tetsuroh Miura	239799US2	3321
22850	7590	01/28/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			BRASE, SANDRA L	
			ART UNIT	PAPER NUMBER
			2852	

DATE MAILED: 01/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

10/612,146

Applicant(s)

MIURA ET AL.

Examiner

Sandra L. Brase

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8,10-14 and 16-21 is/are rejected.
- 7) ☒ Claim(s) 3,9 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/10/04; 10/28/04; 9/23/04 and 9/2/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 2, 4-8, 10-12, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffman et al. (US 6,771,916) in view of Okado et al. (US 6,137,977).

4. Hoffman et al. (...916) disclose an electrophotographic image forming apparatus comprising: a plurality of photographic elements provided with a photoconductive layer on a surface thereof (col. 11, lines 3-9); a plurality of charging means for uniformly charging the surface of the photoconductive element (col. 11, line 66 – col. 12, line 6); exposing means for

Art Unit: 2852

exposing the surface of each of the photoconductive elements charged by one of the charging means to thereby form a latent image (col. 11, line 66 – col. 12, line 6); a plurality of developing means each for developing the latent image with toner of a particular color by feeding the toner to one of the photoconductive elements to thereby produce a corresponding toner image (col. 11, line 66 – col. 12, line 6); a plurality of image transferring means each for transferring the toner image from one of the photoconductive elements to a subject body (col. 1, lines 15-47; and col. 11, lines 7-43); air sending means for sending air to a space around the plurality of photoconductive elements (abstract; col. 8, line 59 – col. 9, line 2; col. 12, lines 25-51; col. 16, lines 34-67; col. 19, lines 28-58; and col. 32, line 33 – col. 33, line 38); and air conditioning means for dehumidifying air to be sent by the air sending means (abstract; col. 8, line 59 – col. 9, line 2; col. 13, lines 34-42; col. 20, lines 43-65; col. 23, line 52 – col. 24, line 56; col. 32, lines 9-14; and col. 36, lines 8-44). Dehumidified air output from the air sending means is sent into a plurality of image forming modules (abstract; col. 16, lines 34-67; and col. 32, lines 33 – col. 33, lines 38), where each of the image forming module accommodates the photoconductive element, the charging means and the developing means; and is removably mounted to a casing of the apparatus (col. 11, line 66 – col. 12, line 6; and col. 15, lines 42-65). The air conditioning means controls air temperature while dehumidifying air (col. 13, lines 27-42). However, Hoffman et al. (...916) do not disclose the developing means collecting residual toner, the contact charger is a contact type, and the toner being produced by polymerization. Okado et al. (...977) disclose an image forming apparatus including a developing unit that includes a developing roller configured to feed toner to develop a latent image on a photoconductive element (col. 30, line 23 – col. 31, line 7) and configured to collect residual toner left on the photoconductive element (col. 26, lines

Art Unit: 2852

36-49; col. 27, lines 1-5; col. 29, lines 24-31; col. 30, lines 4-10, and col. 32, lines 4-7). The charging means is preferably a contact charger that uniformly charges the surface of the photoconductive element (col. 24, lines 61-67). The toner is produced by polymerization (col. 6, lines 5-11). It would have been obvious to one of ordinary skill in the art at the time of the invention to have the developing roller collect residual toner left on the photographic element after image transfer, as disclosed by Okado et al. (...977), so that the toner can be collected by the developing device for reuse. It would also have been obvious to one of ordinary skill in the art at the time of the invention to have the charging means be a contact charger, as disclosed by Okado et al. (...977), since a contact charger can be preferably used instead of a non-contact charging device, and where a contact charger is the functional equivalent of a non-contact charger since they both function to charge a photoconductive surface in an image formation apparatus. Moreover, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the toner produced by polymerization, as disclosed by Okado et al. (...977), since such toner particles have a sharper particle diameter distribution and have a spherical shape closer to a true sphere, showing a slight change in shape after use for a long period of time, with a smaller change in bulk density.

5. Claims 13, 14, 16-18 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriki et al. (US 6,077,636) in view of Hoffman et al. (US 6,771,916) and Okado et al. (US 6,137,977).

6. Moriki et al. (...636) disclose an electrophotographic image forming apparatus comprising: a photographic element (1, 33 or 103), provided with a photoconductive layer on a

Art Unit: 2852

surface thereof; a charging means (2, 46 or 102) for uniformly charging the surface of the photoconductive element; an exposure means (E, 31 and 101) for exposing the surface of the photoconductive element charged by the charging means to thereby form a latent image; a plurality of developing means (4Bk, 4Y, 4C and 4M; or 36, 37, 38 and 39; or 104, 105, 106 and 107) arranged around the photoconductive element and each storing toner of a particular color for developing the latent image with the toner to thereby produce a corresponding toner image (figures 1, 3 and 4); and a transferring means for sequentially transferring toner images sequentially formed on the photoconductive element to a subject body (5 or S) one above the other (figures 1, 3 and 4). The charging means can be a contact charger (col. 22, lines 3-5; and figure 1). However, Moriki et al. (...977) do not disclose the claimed air sending means, the claimed air conditioning means, the developing means collecting residual toner and the toner produced by polymerization. Hoffman et al. (...916) disclose an image forming apparatus including an air sending means for sending air to a space around the plurality of photoconductive elements (abstract; col. 8, line 59 – col. 9, line 2; col. 12, lines 25-51; col. 16, lines 34-67; col. 19, lines 28-58; and col. 32, line 33 – col. 33, line 38); and an air conditioning means for dehumidifying air to be sent by the air sending means (abstract; col. 8, line 59 – col. 9, line 2; col. 13, lines 34-42; col. 20, lines 43-65; col. 23, line 52 – col. 24, line 56; col. 32, lines 9-14; and col. 36, lines 8-44). Dehumidified air output from the air sending means is sent into a plurality of image forming modules (abstract; col. 16, lines 34-67; and col. 32, lines 33 – col. 33, lines 38), where each of the image forming module accommodates the photoconductive element, the charging means and the developing means; and is removably mounted to a casing of the apparatus (col. 11, line 66 – col. 12, line 6; and col. 15, lines 42-65). The air conditioning means

Art Unit: 2852

controls air temperature while dehumidifying air (col. 13, lines 27-42). It would have been obvious to one of ordinary skill in the art at the time of the invention to have the claimed air sending means and air conditioning means, as disclosed by Hoffman et al. (...916) so as to manage air quality within the image forming apparatus. Okado et al. (...977) disclose an image forming apparatus including a developing unit including a development roller that is configured to feed toner to develop a latent image on a photoconductive element (col. 30, line 23 – col. 31, line 7) and is configured to collect residual toner left on the photoconductive element (col. 26, lines 36-49; col. 27, lines 1-5; col. 29, lines 24-31; col. 30, lines 4-10; and col. 32, lines 4-7). The toner is produced by polymerization (col. 6, lines 5-11). It would have been obvious to one of ordinary skill in the art at the time of the invention to have the developing means collect residual toner left on the photographic element after image transfer, as disclosed by Okado et al. (...977), so that the toner can be collected by the developing device for reuse. Moreover, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the toner produced by polymerization, as disclosed by Okado et al. (...977), since such toner particles have a sharper particle diameter distribution and have a spherical shape closer to a true sphere, showing a slight change in shape after use for a long period of time, with a smaller change in bulk density.

Allowable Subject Matter

7. Claims 3, 9 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments filed 11/18/04 have been fully considered but they are not persuasive.

Applicant argues that Okado et al. (US 6,137,977) do not disclose that a roller is used to both feed toner to a photoconductive element and to collect residual toner left on the photoconductive element. However, this is incorrect. As explained above the developing roller of Okado et al. (...977) both feeds toner to a photoconductive element (col. 30, line 23 – col. 31, line 7) and collects residual toner left on the photoconductive element (col. 26, lines 36-49; col. 27, lines 1-5; col. 29, lines 24-31; col. 30, lines 4-10 and col. 32, lines 4-7).

Final Rejection

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra L. Brase whose telephone number is (571) 272-2131. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur T. Grimley, can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sandra L. Brase
Primary Examiner
Art Unit 2852

January 26, 2005